

CLAIMS

1. Process for purification of a compound comprising an activated carbon treatment using a filter unit containing activated carbon immobilized in a matrix, the treatment comprising:
- a) passing a suitable volume of a feed containing the compound over a first series of  $n$  connected filter units operating in series to obtain an effluent, wherein  $n$  is at least two, said filter units having been assigned a position number 1 to  $n$  in the series and position number 1 being the first supplied with the feed,
- b) disconnecting a filter unit from the first series of filter units at any position number between 1 to  $n-1$  after passing the suitable volume of feed, and connecting a fresh filter unit at any position that has a higher number than the position number of the disconnected filter unit, resulting in a next series of filter units,
- c) passing a next suitable volume of feed containing the compound over the next series of filter units to obtain a next effluent,
- d) optionally combining the effluents obtained in a and c, and
- e) recovering the compound from the effluent.
2. The process according to claim 1, wherein the filter unit is disconnected at position number between 1 to  $n-1$  and wherein the fresh filter unit is connected at position number  $n+1$ .
3. The process according to claim 1, wherein the filter unit is disconnected at position number 1 and wherein the fresh filter unit is connected at position number  $n+1$ .
4. The process according to any of claims 1 to 3 wherein the number  $n$  of connected filter units operating in series is 2 to 10.
5. The process according to any of claims 1 to 4, wherein the treatment is operated in batch, semi-continuous or continuous mode.

6. The process according to any of claims 1 to 5, wherein the flow rate of the feed is 0.05 to 400 L/min, preferably 20 to 100 L/min, more preferably 30 to 40 L/min.
7. The process according to any of claims 1 to 6 wherein the activated carbon immobilized in a matrix is in the form of a membrane sheet .
8. The process according to claim 7, wherein the flux over the membrane sheet is 1 to 50 L/m<sup>2</sup>/min., preferably 1.5 to 20 L/m<sup>2</sup>/min., more preferably 1.5 to 10 L/m<sup>2</sup>/min.
9. The process according to any of claims 1 to 8, wherein the residence time of the feed containing the compound in a single filter unit is at least 15 seconds and maximal 60 minutes.
10. The process according to any of claims 1 to 9, wherein the process is operated at a temperature between minus10 °C to 40°C.
11. The process according to any of claim 1 to 10, wherein at least one disconnected filter unit is regenerated *in situ* by rinsing with a solvent.
12. The process according to any of claims 1 to 11, wherein the compound is an unstable compound.
13. The process according to claims 1 to 12, wherein the compound is a secondary metabolite or a protein.
14. The process according to claim 13, wherein the secondary metabolite is selected from the group consisting of an antibiotic, a vitamin, a carotenoid or a PUFA.
15. The process according to any of claims 1 to 14, wherein the compound is obtained by fermentation using a microorganism.
16. The process according to claim 14, wherein the microorganism is a *Streptomyces* species.

17. The process according to claim 15, wherein the *Streptomyces* species is selected from the group consisting of *S. clavuligerus*, *S. coelicolor*, *S. griseus*, *S. venezuela*, *S. jumonjinensis*, *S. katsurahamanus* or *S. aureofaciens*.

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18. The process according to claims 14 to 17, wherein the compound is selected from the group consisting of clavulanic acid, streptomycin, chloramphenicol, tetracycline or  $\beta$ -carotene.

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19. The process according to any of the previous claims, further comprising the step of converting the compound into a pharmaceutically acceptable salt or food grade product.